

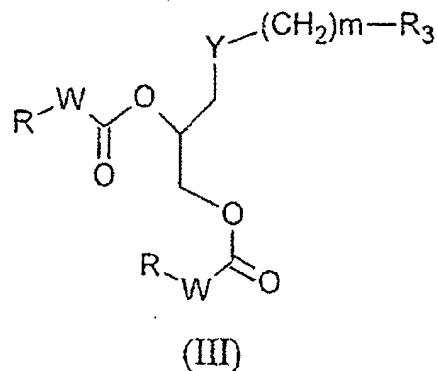
**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

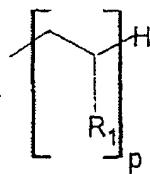
**Listing of Claims:**

1-22. (Canceled)

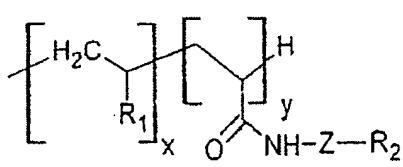
23. (New) A compound of formula (III):



in which  $R_3$  represents a group selected from the group consisting of:



and



(IV)

(V)

wherein:

$Y$  represents a sulfur atom or an

-NH-CO-(CH<sub>2</sub>)<sub>n</sub>-X group, X represents a sulfur atom or a -CH<sub>2</sub>- group; n is an integer ranging from 0 to 10;

R represents a group selected from the group consisting of:

C<sub>4</sub>-C<sub>24</sub> hydrocarbon-based radicals; and C<sub>4</sub>-C<sub>24</sub> fluorinated hydrocarbon-based radicals; C<sub>4</sub>-C<sub>24</sub> thioalkyl radicals;

W represents an -NH- or -CH<sub>2</sub>- group;

p represents an integer ranging from 1 to 50;

m is an integer ranging from 0 to 9, and, when X = CH<sub>2</sub>, then 0 < m+n < 6;

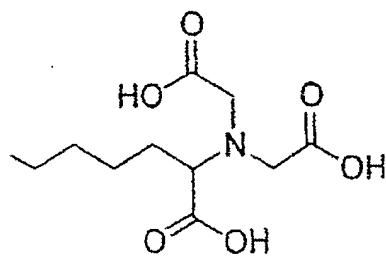
x represents an integer ranging from 1 to 30;

y represents 0 or an integer ranging from 1 to 10;

R<sub>1</sub> represents a hydrophilic group;

R<sub>2</sub> represents a recognition group having an affinity for a biological target;

Z is a spacer arm; Z is bound to R<sub>2</sub> by means of a bond which is selected from the group consisting of functions -O-CO-, -CO-NH-, -NH-CO-NH-, -NH-CO-O-, O-CO-O-, -O-, -CH=N-, -S- and by complexation of a nickel atom; Z is selected from the group consisting of a peptide chain, an  $\Omega$ -amino acid, ethanolamine, 3-propanolamine and a diamine of formula -NH-(CH<sub>2</sub>)<sub>p'</sub>-NH-, in which p' represents an integer ranging from 2 to 6, or -Z-R<sub>2</sub> represents a group of the formula below:

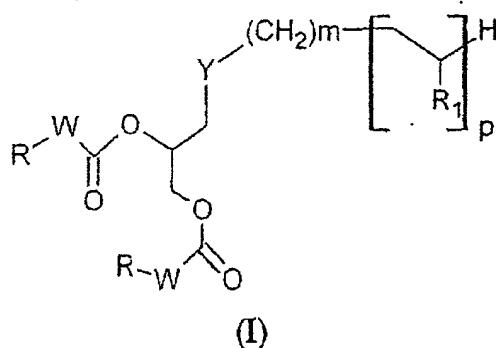


24. (New) The compound of claim 23, wherein the group R is selected from the group consisting of:

thiooctyl radical,

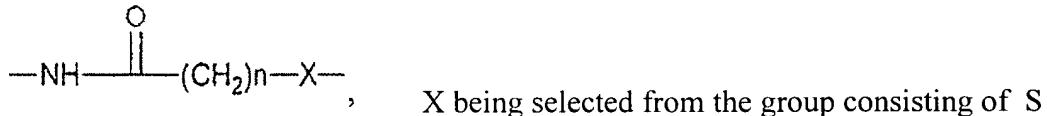
n-butyl, tert-butyl, isobutyl, n-pentyl, isopentyl, n-hexyl, n-heptyl, n-octyl, n-nonyl, n-decyl, n-undecyl, n-dodecyl, n-tridecyl, n-tetradecyl, n-pentadecyl, n-hexadecyl, n-heptadecyl, n-octadecyl and the phytyl radical,  $(CH_3[CH(CH_3)(CH_2)_3]_3CH(CH_3)CH_2CH_2)$ , fluorinated hydrocarbon-based radicals corresponding to the formula  $-(CH_2)_t-(CF_2)_rF$ , in which r and t represent two integers wherein  $14 \geq r+t \geq 4$ .

25. (New) The compound of claim 24, corresponding to formula (I):



in which:

Y represents a sulfur atom or a group

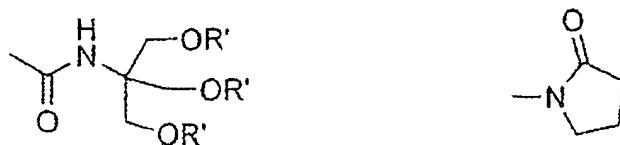


m is an integer ranging from 0 to 9; and, when  $\text{X} = \text{CH}_2$ , then  $0 < m+n < 6$ ;

W represents an  $-\text{NH}-$  group or a  $-\text{CH}_2-$  group;

p represents an integer ranging from 1 to 50;

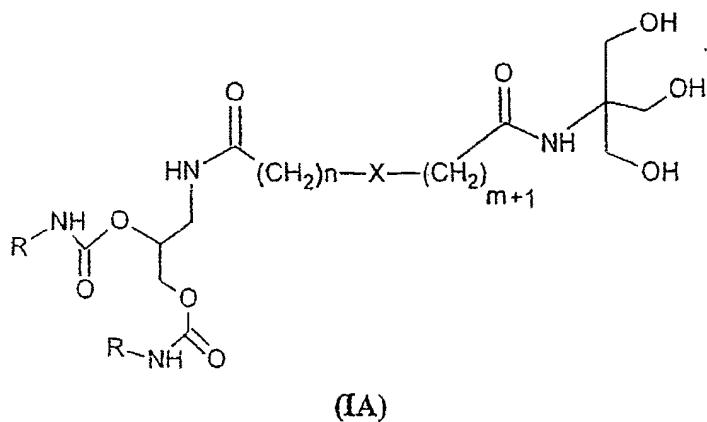
$\text{R}_1$  represents a group selected from the group consisting of:



in which R' represents H or a hydrophilic group;

R represents a group selected from the group consisting of: C<sub>4</sub>-C<sub>24</sub> hydrocarbon-based radicals; C<sub>4</sub>-C<sub>24</sub> fluorinated hydrocarbon-based radicals; and C<sub>4</sub>-C<sub>24</sub> thioalkyl radicals.

26. (New) The compound of claim 25, having formula (IA):



in which:

X represents a sulfur atom or a -CH<sub>2</sub>- group;

n is an integer ranging from 0 to 10;

m is an integer ranging from 0 to 9;

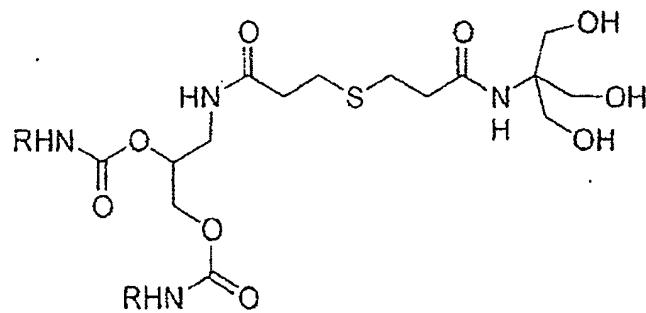
when X = CH<sub>2</sub>, then 0 < m+n < 6;

R represents a group selected from the group consisting of:

C<sub>4</sub>-C<sub>24</sub> hydrocarbon-based radicals; C<sub>4</sub>-C<sub>24</sub> fluorinated hydrocarbon-based radicals; and C<sub>4</sub>-C<sub>24</sub> thioalkyl radicals.

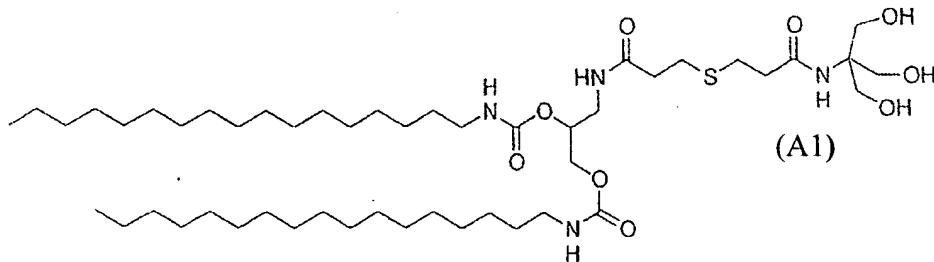
27. (New) The compound of claim 26, wherein R is selected such that (IA) has a phase transition temperature of greater than 37°C.

28. (New) The compound of claim 26, having formula A:

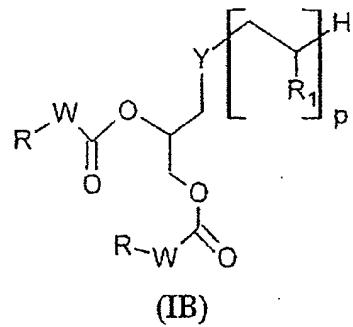


(A)

29. (New) The compound of claim 28, having formula A1:



30. (New) The compound of claim 25, having formula (IB):



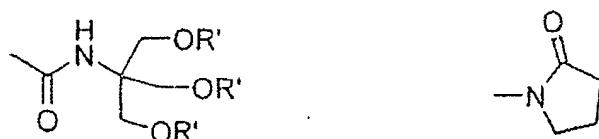
in which:

Y represents a sulfur atom or -NH-CO-CH<sub>2</sub>CH<sub>2</sub>S- group;

W represents an -NH- group or a -CH<sub>2</sub>- group;

p represents an integer ranging from 1 to 50;

R<sub>1</sub> represents a group selected from the group consisting of::



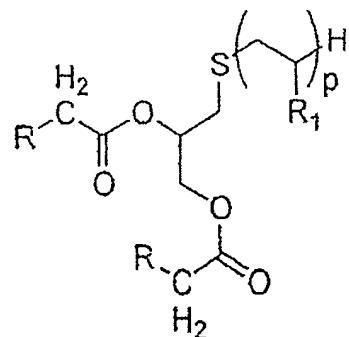
in which R' represents H or a C<sub>4</sub>-C<sub>24</sub> polyhydroxylated hydrocarbon-based compound;

R represents a group chosen from: C<sub>4</sub>-C<sub>24</sub> hydrocarbon-based radicals; C<sub>4</sub>-C<sub>24</sub> fluorinated hydrocarbon-based radicals; C<sub>4</sub>-C<sub>24</sub> thioalkyl radicals.

31. (New) The compound of claim 30, wherein R is selected such that (IB) has a critical micellar concentration of less than 10<sup>-5</sup> M.

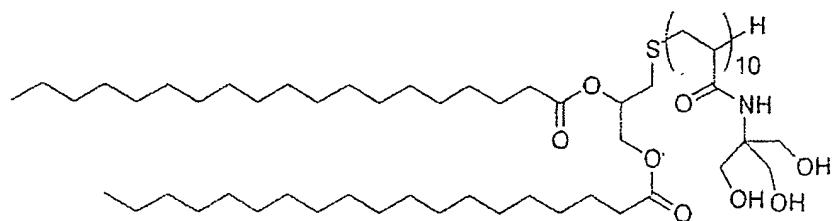
32. (New) The compound of claim 30, which satisfies one or more of the conditions below:  
p represents an integer ranging from 1 to 5;  
Y represents a sulfur atom, or both.

33. (New) The compound of claim 30, having formula C, in which p represents an integer ranging from 5 to 15:



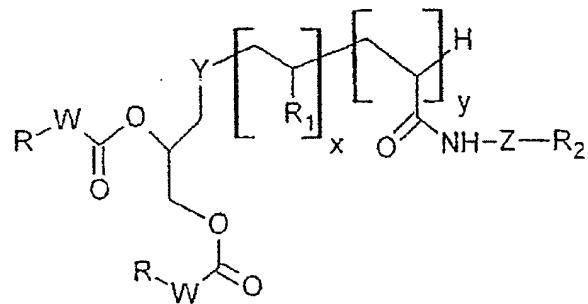
(C)

34. (New) The compound of claim 33, having formula C1:



(C1)

35. (New) The compound of claim 23, having formula (II):



(II)

in which:

Y represents a sulfur atom or the -NH-CO-(CH<sub>2</sub>)<sub>n</sub>-X- group, in which X represents a sulfur atom or a -CH<sub>2</sub>- group, n is an integer ranging from 0 to 10;

W represents an -NH- or -CH<sub>2</sub>- group;

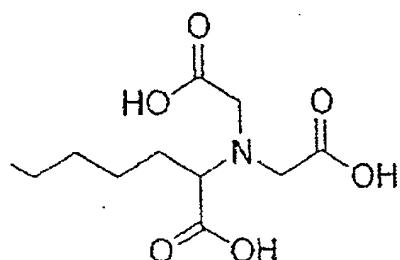
x represents an integer ranging from 1 to 30;

y represents 0 or an integer ranging from 1 to 10;

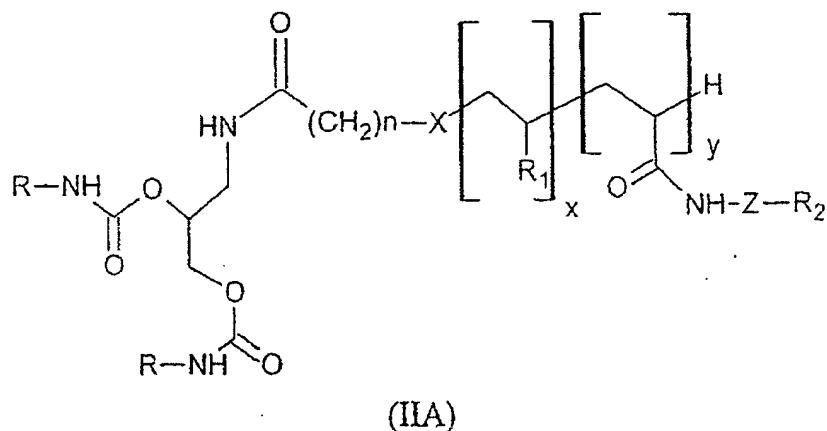
R<sub>1</sub> represents a hydrophilic group;

R<sub>2</sub> represents a recognition group having an affinity for a biological target;

Z is a spacer arm; Z is bound to R<sub>2</sub> by means of a bond which is selected from the group consisting of functions -O-CO-, -CO-NH-, -NH-CO-NH-, -NH-CO-O-, O-CO-O-, -O-, -CH=N- or -S- or by complexation of a nickel atom; Z is selected from the group consisting of a peptide chain, an  $\Omega$ -amino acid, ethanolamine, 3-propanolamine and a diamine of formula -NH-(CH<sub>2</sub>)<sub>p</sub>-NH-, in which p represents an integer ranging from 2 to 6, or -Z-R<sub>2</sub> represents a group of formula:



36. (New) The compound of claim 35, having formula (IIA):

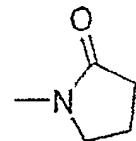
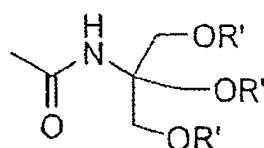


37. (New) The compound of claim 36, wherein one or more of the following conditions are met:

$X = S$ ,

$n = 2$ ,

$R_1$  is selected from the group consisting of:



in which  $R'$  represents H or a C<sub>4</sub>-C<sub>24</sub> polyhydroxylated hydrocarbon-based compound,

$R$  is selected from the group consisting of::

thiooctyl radical,

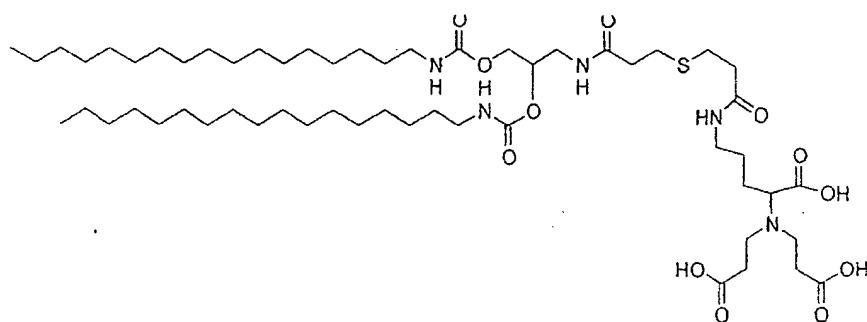
n-butyl, tert-butyl, isobutyl, n-pentyl, isopentyl, n-hexyl, n-heptyl, n-octyl, n-nonyl, n-decyl, n-undecyl, n-dodecyl, n-tridecyl, n-tetradecyl, or the phytyl radical, (CH<sub>3</sub>[CH(CH<sub>3</sub>)(CH<sub>2</sub>)]<sub>3</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>),

fluorinated hydrocarbon-based radicals corresponding to the formula -

(CH<sub>2</sub>)<sub>r</sub>-(CF<sub>2</sub>)<sub>t</sub>F, in which  $r$  and  $t$  represent two integers wherein 14  $\geq r+t \geq 4$ ,

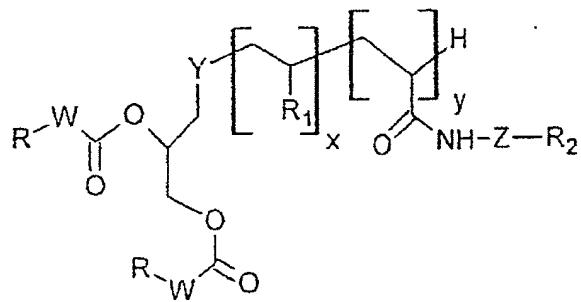
$R_2$  comprises antibodies, antibody fragments, or small effector molecules that allow interaction with cell surface receptors, antigens, sugars and peptides.

38. (New) The compound of claim 37, having formula F:



(F)

39. (New) The compound of claim 35, having formula (IIB):



(IIB)

in which:

Y represents a sulfur atom or the -NH-CO-CH<sub>2</sub>CH<sub>2</sub>S- group.

40. (New) A nanoparticle comprising one or more compounds of formula (I) of claim 25 as a constituent of walls thereof.

41. (New) The nanoparticle of claim 40, which comprises from about 1 to 5% of one or more compounds of formula (II) of claim 35.

42. (New) The nanoparticle of claim 40, which further comprises an acrylic telomer or acrylic polymer in an inner aqueous cavity thereof.

43. (New) A nanoparticle composition comprising nanoparticles of claim 40, and a compound comprising a therapeutic compound, diagnostic compound or a vaccine compound.

44. (New) The nanoparticle composition of claim 43, which is a therapeutic composition comprising nanoparticles and a therapeutic compound.

45. (New) The nanoparticle composition of claim 43, which is a diagnostic composition comprising nanoparticles and a diagnostic compound.

46. (New) The nanoparticle composition of claim 43, which is a vaccine composition comprising nanoparticles and a vaccine compound.